

Name: _____

Unit 4 Practice Test

Teacher: _____

Algebra Pd: _____

Day _____ Month _____ Year _____

Part One: Equations: Solve each equation. Show all work and box your final answer.

Recommended: Check your work via substitution.

1. $\frac{2a}{2} = \frac{-12}{2}$ $a = -6$	2. $b + 3 = -15$ $-3 -3$ $b = -18$
3. $4(c - 2) = 16$ $4c - 8 = 16$ $+8 +8$ $4c = 24$ $4 4$ $c = 6$	4. $12 + \frac{d}{-3} = 10$ $-12 -3 -12$ $-3 \cdot \frac{d}{-3} = -2 \cdot -3$ $d = 6$
5. $5\frac{3}{2}e = 12\frac{3}{2}$ $e = 18$	6. $-9f - 2 + 5f = 4f + 14$ $-4f - 2 = 4f + 14$ $-4f -4f$ $-8f - 2 = 14$ $+2 +2$ $-8f = 16$ $-8f = 16$ $-8 -8$ $f = -2$
7. $-3(2g + 6) = -10g - 10 + 4g - 8$ $-6g - 18 = -10g - 10 + 4g - 8$ $-6g - 18 = -10g + 4g - 10 - 8$ $-6g - 18 = -6g - 18$ $\text{IDENTITY } (I)$	8. $2(3h - 6) = 4h - 10 + 2h$ $6h - 12 = 6h - 10$ $-6h -6h$ $-12 \neq -10$ (NS)
9. $\left(\frac{5}{6}i - \frac{2}{3} = 4\right)$ $\frac{30}{6}i - \frac{12}{3} = 24$ $5i - 4 = 24$ $+4 +4$ $5i = 28$ $\frac{5i}{5} = \frac{28}{5}$ $i = \frac{28}{5}$	10. $3j - 10 = 6$ $+10 +10$ $3j = 16$ $3 3$ $j = \frac{16}{3}$ $5\frac{1}{3}$ is ok!

 $5\frac{3}{5}$ is ok!

Part Two: Algebraic Sentences: Please answer each question in complete sentences using algebraic terms. Echo the prompt and avoid vague words.

11. What is the major goal of solving an equation?

isolate the variable + find its value.

12. When do we use inverse operations and when do we use combining like terms when solving an equation? Mention a specific case for each.

We use inverse operations after we use combining like terms to move terms from one side of the equation to the other

Part Three: Justifying Steps while Solving an Equation:

13. Given Equation:	Property
$-4(x + 2) = 8x + 4$	
$-4x - 8 = 8x + 4$	Distributive
$-12x - 8 = 4$	subtraction prop of equality
$-12x = 12$	addition property of equality
$x = -1$	Division prop of equality

Part Five: Word Problem: You must solve this word problem algebraically and complete all steps.

14. Damian purchased five bags of hot Cheetos and spent an additional seven dollars at CVS. Peter purchased three bags of hot Cheetos and spent an additional thirteen dollars at CVS. They each spent exactly the same amount of money. How much does one bag of hot Cheetos cost?

a. Define a variable that makes sense for the situation. Use the magic word.

Let $c = \text{Cheetos}$

b. Write an equation that describes the situation.

$$5c + 7 = 3c + 13$$

c. Solve the equation.

$$\begin{array}{r} 5c + 7 = 3c + 13 \\ -3c \quad -3c \\ \hline 2c + 7 = 13 \\ -7 \quad -7 \\ \hline \end{array}$$

$$\frac{2c}{2} = \frac{6}{2}$$

$$c = 3$$

Cheetos cost \$3.00.

d. Check via substitution and reality.

$$\begin{array}{l} 5(3) + 7 = 3(3) + 13 \\ 15 + 7 = 9 + 13 \\ 22 = 22 \end{array}$$

